



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/874,525	06/04/2001	John Suk-Hyun Hong	M5869US2P	6859

27906 7590 04/12/2004

PATENT LAW OFFICES OF DAVID MILLERS  
6560 ASHFIELD COURT  
SAN JOSE, CA 95120

EXAMINER

MAI, TAN V

ART UNIT	PAPER NUMBER
----------	--------------

2124

DATE MAILED: 04/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/874,525

Applicant(s)

HONG, JOHN SUK-HYUN

Examiner

Tan V Mai

Art Unit

2124

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☒ Claim(s) 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>2</u> . | 6) <input type="checkbox"/> Other: _____  |

1. Claims 3 and 6-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 3, it is noted that the terms "**the**" in "**the** first portion of the first the first operand signal and the **first** portion of a second operand ... **the** second portion,, **the** second portion" (last 6 lines) are NOT the same as "a first portion ... a second portion ..." (lines 3-5) because the "width" of the first / second portion are different. Also, the phrases "applies the second portion of the first operand signal and the first portion of the second operand signal to the **second** multiplier" (lines 4-5 from the bottom) and "applies the second portion of the first operand signal and the first portion of the second operand signal to the **third** multiplier" (lines 3-4 from the bottom) should be different.

As per claim 6, the term "second partial multiplicand" (line 4) should be --fourth partial multiplicand--. It is noted that one input of a multiplier is called "multiplier" operand. The other input is called "multiplicand" operand.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application

by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

(f) he did not himself invent the subject matter sought to be patented.

(g)(1) during the course of an interference conducted under section 135 or section 291, another inventor involved therein establishes, to the extent permitted in section 104, that before such person's invention thereof the invention was made by such other inventor and not abandoned, suppressed, or concealed, or (2) before such person's invention thereof, the invention was made in this country by another inventor who had not abandoned, suppressed, or concealed it. In determining priority of invention under this subsection, there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

3. Claims 10 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Purcell '622.

Purcell teaches, e.g., see Figs. 2 and 7, the claimed combination. Also, see Abstract.

4. Claims 10 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Purcell '070.

Purcell teaches, e.g., see Fig. 2, the claimed combination. Also, see Abstract.

5. Claims 10 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Pearson et al.

Pearson et al teach, e.g., see Figs. 1-3, the claimed combination. The multiply unit has four multipliers and performs in first and second modes. Also, see Abstract.

6. Claims 10 is rejected under 35 U.S.C. 102(e) as being clearly anticipated by Yano et al.

Yano et al teach, e.g., see Fig. 3, the claimed combination. The multiply unit has four multipliers and performs in first and second modes. Also, see col. 7, line 18 to col. 8, line 64.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-2, 4-9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pearson et al.

As per independent claims 1 & 4 and dependent claim 6, Pearson et al have been discussed in paragraph 5 above. The claim recites "an output circuit that provides output signals ... in a first mode, and provides an output signal ... in a second mode". Yano et al do provide the desired output(s) without the output circuit. Therefore, the

Art Unit: 2124

"output circuit" is merely optional feature. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to design the claimed invention according to Pearson et al's teachings because the reference is a multiply unit capable of providing the result(s) in either first or second mode as claimed.

As per dependent claim 2, Pearson et al do show "16-bit by 16-bit".

As per dependent claim 5, the claim adds the "two clock cycles" feature. The feature is obvious to a person having ordinary skill in the art because the adder followed the multipliers.

As per dependent claims 7-9, the claims add the "signed" multiplication feature. Pearson et al's multiply unit is a signed multiply unit.

As per dependent claim 11, the claim adds the "first data width is **one fourth** of a data width..." feature. The feature is obvious design choice because the "output product values" can be truncated as desired.

9. Claims 1-2, 4-9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yano et al.

As per independent claims 1 & 4 and dependent claim 6, Yano et al have been discussed in paragraph 6 above. The claim recites "an output circuit that provides output signals ... in a first mode, and provides an output signal ... in a second mode". Yano et al do provide the desired output(s) without the output circuit. Therefore, the "output circuit" is merely optional feature. It would have been obvious to a person

Art Unit: 2124

having ordinary skill in the art at the time the invention was made to design the claimed invention according to Yano et al's teachings because the reference is a multiply unit capable of providing the result(s) in either first or second mode as claimed.

As per dependent claim 2, Yano et al do show "16-bit by 16-bit".

As per dependent claim 5, Yano et al do mention "two clock cycles", e.g. see col. 3, first and third complete paragraphs.

As per dependent claims 7-9, the claims add the "signed" multiplication feature. Yano et al's multiply unit is a signed multiply unit.

As per dependent claim 11, the claim adds the "first data width is **one fourth** of a data width..." feature. The feature is obvious design choice because the "output product values" can be truncated as desired.

10. Claims 3 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Cited references are art of interest.

12. The following is an examiner's statement of reasons for allowance: the recorded references do NOT teach or suggest the multiply unit having the first / second operand

*now* divided into FOUR portions as recited in dependent claims 3 and 12<sup>7</sup>.

12  
^

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tan V. Mai whose telephone number is (703) 305-9761. The examiner can normally be reached on Tue-Fri from 6:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki, can be reached on (703) 305-9662. The fax phone numbers for the organization where this application or proceeding is assigned are:

After-final	(703) 746-7238
Official	(703) 746-7239
Non-Official/Draft	(703) 746-7240.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.



TAN V. MAI  
PRIMARY EXAMINER